

# Infrastructure for terrestrial and freshwater ecology in a changing world

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ICRI, Copenhagen 22-24 March 2012

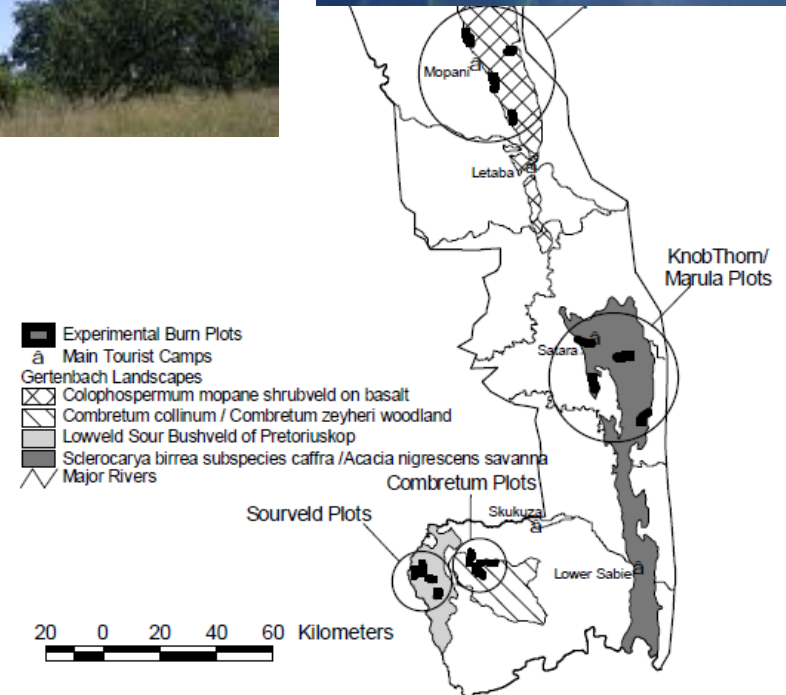
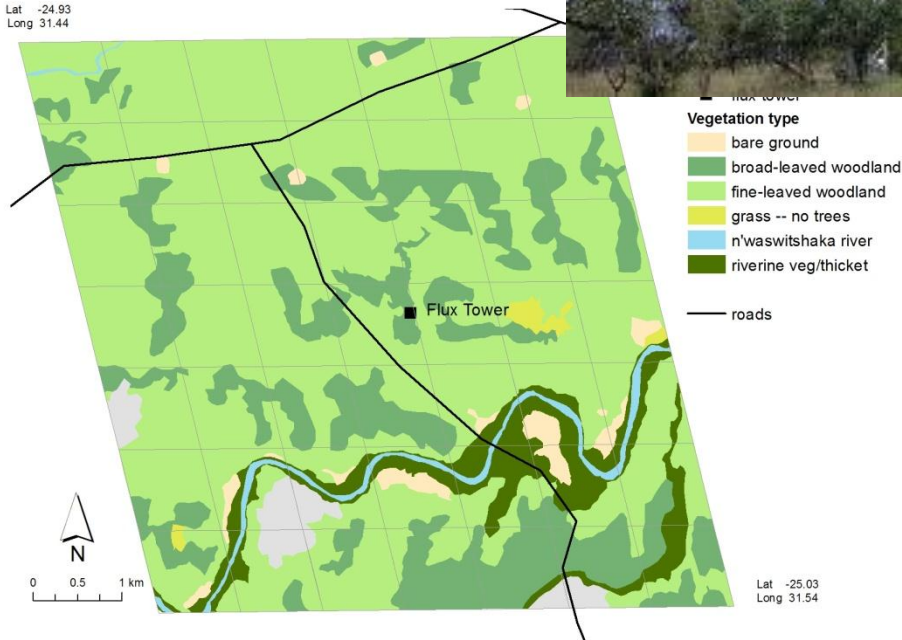
# Research on ecosystems

- Ecosystem services are the necessities for human life provided by natural, semi-natural, managed and human-dominated landscapes, seas, rivers and lakes
- The 'ecosystem scale' (~km to 10's km) is the scale at which ecosystem processes work, are impacted on, deliver their services and at which they must be studied
- Ecosystem science is now feasible, quantitative and predictive, although technically complex
- Ecosystems are diverse and replication is difficult. Robust understanding requires long-term study, meta-analysis across sites, modelling and interpolation in space and time

# Ecological infrastructure includes sites, experiments, equipment, laboratories, data infrastructure, network support and remote sensing



Lat. -24.93  
Long 31.44



# Networks are spontaneously forming, nationally and internationally

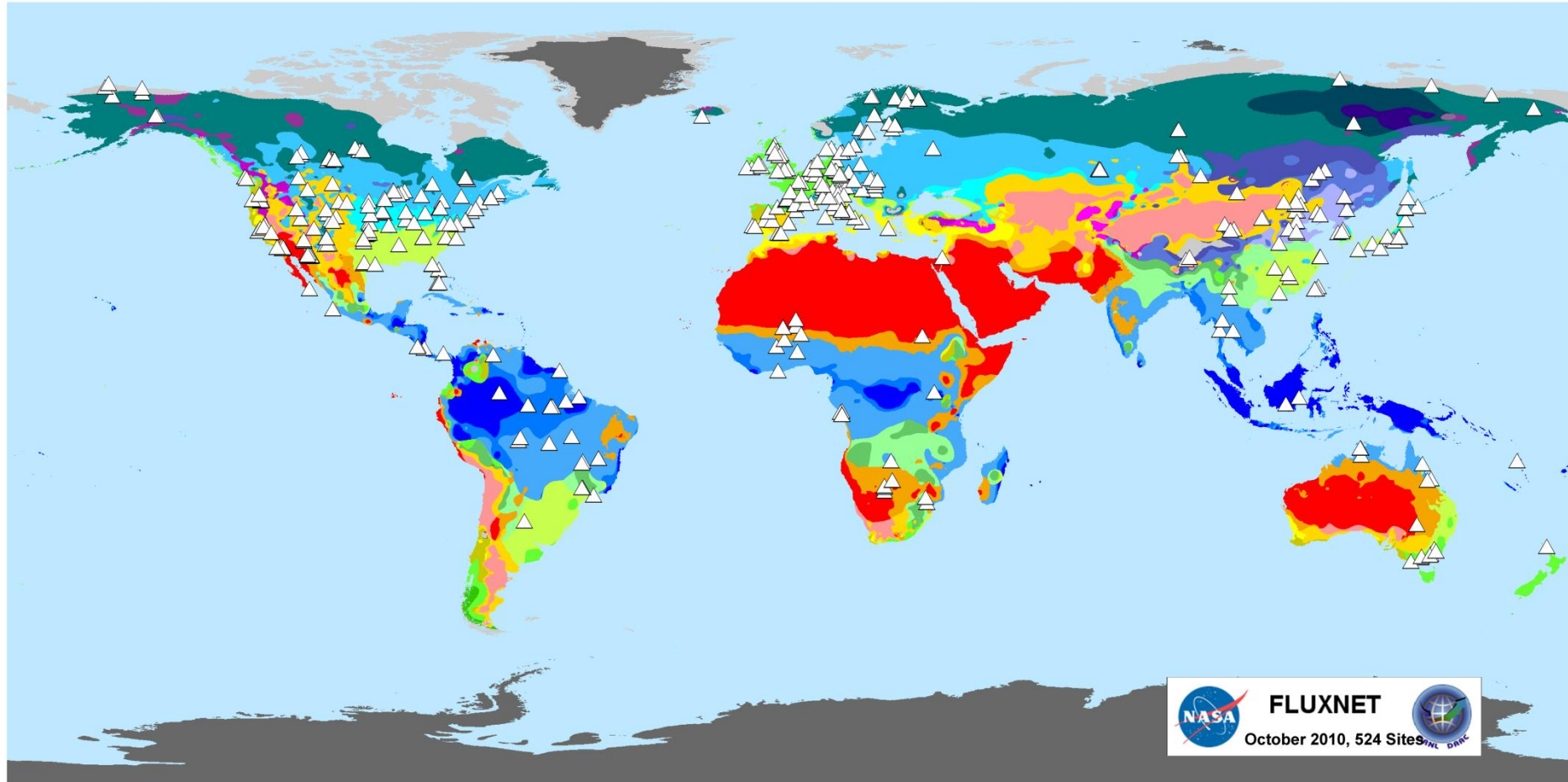


To succeed, they need:

- **Sustained, adequate funding** and institutional stability
- An **open-access** mandate and responsibility
- Incentives for site operators to **harmonise** methods and share information
- A strategy to **extend the coverage** into critical and under-sampled areas



# Large and important parts of the world are undersampled



## Koeppen-Geiger Climate Classification

Af - Tropical/Rainforest	Csb - Temperate/Dry_Summer/Warm_Summer	Dsb - Cold/Dry_Summer/Warm_Summer	Dfb - Cold/Without_Dry_Season/Warm_Summer
Am - Tropical/Monsoon	Cwa - Temperate/Dry_Summer/Hot_Summer	Dsc - Cold/Dry_Summer/Cold_Summer	Dfc - Cold/Without_Dry_Season/Cold_Summer
Aw - Tropical/Savannah	Cwb - Temperate/Dry_Winter/Warm_Summer	Dsd - Cold/Dry_Summer/Very_Cold_Winter	Dfd - Cold/Without_Dry_Season/Very_Cold_Winter
BWh - Arid/Desert/Hot	Cwc - Temperate/Dry_Winter/Cold_Summer	Dwa - Cold/Dry_Winter/Hot_Summer	ET - Polar/Tundra
BWk - Arid/Desert/Cold	Cfa - Temperate/Without_Dry_Season/Hot_Summer	Dwd - Cold/Dry_Winter/Warm_Summer	EF - Polar/Frost
BSh - Arid/Steppe/Hot	Cfb - Temperate/Without_Dry_Season/Warm_Summer	Dwb - Cold/Dry_Winter/Warm_Summer	
BSk - Arid/Steppe/Cold	Cfc - Temperate/Without_Dry_Season/Cold_Summer	Dwd - Cold/Dry_Winter/Very_Cold_Winter	



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